

HIGHLY LINEAR POWER AMPLIFIER AND RADIO APPLICATIONS THEREOF

5

ABSTRACT OF THE DISCLOSURE

A single ended highly linear power amplifier includes a component, a 1st transistor pair, and a 2nd transistor pair. The 1st and 2nd transistor pairs are coupled in series with the component, which may be a resistor, inductor and/or linearly loaded transistor, where the node coupling the component to the 1st and 2nd transistor pairs provides the output of the single-ended highly linear power amplifier. The 1st transistors of the 1st and 2nd transistor pairs are coupled to receive an input signal. The 2nd transistors of the 1st and 2nd transistor pairs are each coupled to receive a separate enable signal. The transistor pairs are enabled via their corresponding enable signal to change the gain of the power amplifier with negligible effects on the linearity of the power amplifier. A differential power amplifier includes the single ended power amplifier and a complimentary mirror image of the single ended power amplifier.